Complete Summary

GUIDELINE TITLE

Conjunctivitis.

BIBLIOGRAPHIC SOURCE(S)

American Academy of Ophthalmology Cornea/External Disease Panel, Preferred Practice Patterns Committee. Conjunctivitis. San Francisco (CA): American Academy of Ophthalmology (AAO); 2008. 30 p. [110 references]

GUIDELINE STATUS

This is the current release of the guideline.

This guideline updates a previous version: American Academy of Ophthalmology Cornea/External Disease Panel, Preferred Practice Patterns Committee. Conjunctivitis. San Francisco (CA): American Academy of Ophthalmology (AAO); 2003. 25 p.

All Preferred Practice Patterns are reviewed by their parent panel annually or earlier if developments warrant and updated accordingly. To ensure that all Preferred Practice Patterns are current, each is valid for 5 years from the "approved by" date unless superseded by a revision.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Conjunctivitis (infectious and noninfectious, and acute, chronic, or recurrent):

- Allergic conjunctivitis

- Mechanical/irritative/toxic conjunctivitis
- Immune-mediated conjunctivitis
- Neoplastic conjunctivitis
- Viral conjunctivitis
- Bacterial conjunctivitis (including gonococcal, nongonococcal, and chlamydial)

GUIDELINE CATEGORY

Counseling
Diagnosis
Evaluation
Management
Treatment

CLINICAL SPECIALTY

Family Practice
Internal Medicine
Ophthalmology
Pediatrics

INTENDED USERS

Physicians

GUIDELINE OBJECTIVE(S)

To diagnose and manage patients with conjunctivitis in order to preserve visual function, reduce or eliminate conjunctival inflammation and its complications, restore patient comfort, and minimize the spread of infectious disease by addressing the following goals:

- Establish the diagnosis of conjunctivitis, differentiating it from other causes of red eye
- Identify the cause of conjunctivitis
- Establish appropriate therapy
- Relieve discomfort and pain
- Prevent complications
- Prevent the spread of communicable diseases
- Educate and engage the patient and referring healthcare providers in the management of the disease

TARGET POPULATION

Individuals of all ages who present with symptoms suggestive of conjunctivitis, such as red eye or discharge

INTERVENTIONS AND PRACTICES CONSIDERED

Diagnosis/Evaluation

1. Medical and ocular history
2. Initial eye examination
    - Visual acuity
    - External examination
    - Slit-lamp biomicroscopy
3. Diagnostic tests
    - Cultures of the conjunctiva
    - Smears for cytology and special stains
    - Biopsy of bulbar conjunctiva

Management/Treatment

1. Vasoconstrictor/antihistamine eye drops
2. Topical cromolyn
3. Topical ketorolac
4. Topical mast-cell inhibitors
5. Systemic antihistamines
6. Topical and systemic steroids
7. Topical and systemic immunosuppressive agents
8. Topical and oral antiviral agents
9. Topical and systemic antibiotics
10. Follow-up
11. Counseling/referral, when applicable

MAJOR OUTCOMES CONSIDERED

- Effectiveness of treatment and management
    - Elimination or reduction of signs and symptoms
    - Restoration or maintenance of normal visual function
    - Detection and treatment of underlying systemic disease processes, when applicable
- Adverse effects of treatment

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

In the process of revising this document, a detailed literature search of articles in the English language was conducted in December 2007 in PubMed and the Cochrane Library on the subject of conjunctivitis for the years 2002 to 2007.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Weighting According to a Rating Scheme (Scheme Given)

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Ratings of Strength of Evidence

Level I includes evidence obtained from at least one properly conducted, well-designed randomized, controlled trial. It could include meta-analyses of randomized controlled trials.

Level II includes evidence obtained from the following:

- Well-designed controlled trials without randomization
- Well-designed cohort or case-control analytic studies, preferably from more than one center
- Multiple-time series with or without the intervention

Level III includes evidence obtained from one of the following:

- Descriptive studies
- Case reports
- Reports of expert committees/organization (e.g., Preferred Practice Patterns [PPP] panel consensus with external peer review)

METHODS USED TO ANALYZE THE EVIDENCE

Review of Published Meta-Analyses
Systematic Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

The results of a literature search on the subject of conjunctivitis were reviewed by the Cornea/External Disease Panel and used to prepare the recommendations, which they rated in two ways. The panel first rated each recommendation according to its importance to the care process. This "importance to the care process" rating represents care that the panel thought would improve the quality of the patient's care in a meaningful way. The panel also rated each recommendation on the strength of the evidence in the available literature to support the recommendation made.

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Ratings of Importance to Care Process

Level A, defined as most important
Level B, defined as moderately important
Level C, defined as relevant but not critical

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Internal Peer Review

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

These guidelines were reviewed by Council and approved by the Board of Trustees of the American Academy of Ophthalmology (September 2008).

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

The ratings of importance to the care process (A-C) and the ratings for strength of evidence (I-III) are defined at the end of the "Major Recommendations" field.

Diagnosis

The initial evaluation of a patient should include the relevant aspects of the comprehensive medical eye evaluation (American Academy of Ophthalmology Preferred Practice Patterns Committee, 2005; American Academy of Ophthalmology Pediatric Ophthalmology/Strabismus Panel, 2007), [A:III] but some elements of the evaluation may be deferred in patients with symptoms and signs suggestive of infectious conjunctivitis.

History

- Symptoms and signs [A:III]
- Duration of symptoms [A:III]
- Exacerbating factors [A:III]
- Unilateral or bilateral presentation [A:III]
- Character of discharge [A:III]
- Recent exposure to an infected individual [A:III]
- Trauma [A:III]
- Contact lens wear [A:III]
- Symptoms and signs potentially related to systemic diseases [A:III]
- Allergy, asthma, eczema [A:III]
- Use of topical and systemic medications [A:III]

The ocular history includes details about previous episodes of conjunctivitis [A:III] and previous ophthalmic surgery. [B:III]

The medical history takes into account the following:

- Compromised immune status [B:III]
- Prior systemic diseases [B:III]

The social history incorporates pertinent information about the patient's lifestyle, which may include smoking habits, [C:III] occupation and hobbies, [C:III] travel, [C:III] and sexual activity. [C:III]

Examination

The initial eye examination includes measurement of visual acuity, [A:III] external examination, [A:III] and slit-lamp biomicroscopy. [A:III]

The external examination should include the following elements:

- Regional lymphadenopathy [A:III]
- Skin [A:III]
- Abnormalities of the eyelids and adnexae [A:III]
- Conjunctiva [A:III]

The slit-lamp biomicroscopy should include careful evaluation of the following:

- Eyelid margins [A:III]
- Eyelashes [A:III]
- Lacrimal puncta and canaliculi [B:III]
- Tarsal and forniceal conjunctiva (Tullo, 1980; Dawson, Hanna, & Togni, 1972) [A:III]
- Bulbar conjunctiva/limbus (Tullo, 1980; Dawson, Hanna, & Togni, 1972) [A:III]
- Cornea (Dawson, Hanna, & Togni, 1972) [A:III]
- Anterior chamber/iris [A:III]
- Dye-staining pattern [A:III]

Diagnostic Tests

Cultures of the conjunctiva are indicated in all cases of suspected infectious neonatal conjunctivitis (Rapoza et al., 1986). [A:I] Smears for cytology and special stains (e.g., gram, Giemsa) are recommended in cases of suspected infectious neonatal conjunctivitis, chronic or recurrent conjunctivitis, and in cases of suspected gonococcal conjunctivitis in any age group (Rapoza et al., 1986; Centers for Disease Control and Prevention, 2006). [A:II]

A biopsy of bulbar conjunctiva should be performed and a sample should be taken from an uninvolved area adjacent to the limbus in an eye with active inflammation when ocular mucous membrane pemphigoid (OMMP) is suspected (Power et al., 1995). [A:III] In cases of suspected sebaceous gland carcinoma, a full-thickness lid biopsy is indicated (Gilberg & Tse, 1992). [A:II]

Treatment

Indiscriminate use of topical antibiotics or corticosteroids should be avoided, because antibiotics can induce toxicity and corticosteroids can prolong adenoviral infections and worsen herpes simplex virus infections. [A:III] Specific treatment and follow-up recommendations are contained in the main body of the original guideline document.

Frequency of follow-up visits is based on the severity of disease presentation, etiology, and treatment. A follow-up visit should include an interval history, measurement of visual acuity, and slit-lamp biomicroscopy. [A:III] If corticosteroids are used in chronic or recurrent conjunctivitis, baseline and periodic measurement of intraocular pressure and pupillary dilation should be performed to evaluate for cataract and glaucoma. [A:III]

Provider and Setting

Patients with conjunctivitis who are evaluated by non-ophthalmologist health care providers should be referred promptly to the ophthalmologist when any of the following occur: [A:III]

- Visual loss
- Moderate or severe pain
- Severe, purulent discharge
- Corneal involvement
- Conjunctival scarring
- Lack of response to therapy
- Recurrent episodes
- History of herpes simplex virus (HSV) eye disease
- History of immune compromise

Counseling/Referral

When conjunctivitis is associated with sexually transmitted disease, treatment of sexual partners is essential to minimize recurrence and spread of the disease.[A:III] Patients, as well as their sexual partners, should be referred to an appropriate medical specialist. [A:III] The physician must remain alert to the possibility of child abuse in cases of potentially sexually transmitted ocular disease in children. In many states, sexually transmitted diseases and suspected child abuse must be reported to local health authorities or other state agencies.

In cases of ophthalmia neonatorum due to gonococcus, *Chlamydia*, and herpes simplex virus, the infant should be referred to an appropriate pediatric specialist. [A:III] Infants who require systemic treatment are best managed in conjunction with a pediatrician.

When conjunctivitis appears to be a manifestation of systemic disease, patients should be referred for evaluation by an appropriate medical specialist. [A:III]

Definitions:

Ratings of Importance to Care Process

Level A, defined as most important
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Ratings of Strength of Evidence

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- Reports of expert committees/organization (e.g., Preferred Practice Patterns [PPP] panel consensus with external peer review)

CLINICAL ALGORITHM(S)

None provided

EVIDENCE SUPPORTING THE RECOMMENDATIONS

REFERENCES SUPPORTING THE RECOMMENDATIONS

References open in a new window

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is identified and graded for most recommendations (see "Major Recommendations" field).

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

- Appropriate and prompt diagnosis and management of patients with conjunctivitis will preserve visual function, reduce or eliminate conjunctival inflammation and its complications, restore patient comfort, and minimize the spread of infectious disease.

- Early detection of conjunctivitis associated with neoplasms may be lifesaving.

POTENTIAL HARMS

- Long-term use of therapeutic contact lenses may be associated with an increased risk of microbial keratitis.
- Indiscriminate use of topical antibiotics or corticosteroids should be avoided, because antibiotics can induce toxicity and corticosteroids can prolong adenoviral infections and worsen herpes simplex virus (HSV) infections.
- Topical corticosteroids should be avoided in patients with HSV conjunctivitis. Patients who are prescribed prolonged corticosteroids should be monitored using periodic measurement of intraocular pressure and pupillary dilation to evaluate for glaucoma and cataract.
- Systemic corticosteroids may be indicated to control inflammation initially, but they should be weaned as other immunosuppressive therapy becomes effective in order to avoid complications of chronic corticosteroid use.
- Patients using tacrolimus ointment or pimecrolimus cream should be told to keep them away from the conjunctival and corneal surface and from the tear film. Both agents are rarely associated with development of skin cancer or lymphoma.
- Topical antiviral agents may cause toxicity if used for more than 2 weeks.
- Caution is advised for use of oral antiviral agents in patients with impaired renal clearance. Late sequelae include dry eye and corneal anesthesia with neurotrophic keratitis.

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

- **Preferred Practice Patterns provide guidance for the pattern of practice, not for the care of a particular individual**. While they should generally meet the needs of most patients, they cannot possibly best meet the needs of all patients. Adherence to these Preferred Practice Patterns will not ensure a successful outcome in every situation. These practice patterns should not be deemed inclusive of all proper methods of care or exclusive of other methods of care reasonably directed at obtaining the best results. It may be necessary to approach different patients' needs in different ways. The physician must make the ultimate judgment about the propriety of the care of a particular patient in light of all of the circumstances presented by that patient. The American Academy of Ophthalmology is available to assist members in resolving ethical dilemmas that arise in the course of ophthalmic practice.
- **Preferred Practice Pattern guidelines are not medical standards to be adhered to in all individual situations**. The Academy specifically disclaims any and all liability for injury or other damages of any kind, from negligence or otherwise, for any and all claims that may arise out of the use of any recommendations or other information contained herein.
- References to certain drugs, instruments, and other products are made for illustrative purposes only and are not intended to constitute an endorsement of such. Such material may include information on applications that are not considered community standard, that reflect indications not included in approved Food and Drug Administration (FDA) labeling, or that are approved

for use only in restricted research settings. The FDA has stated that it is the responsibility of the physician to determine the FDA status of each drug or device he or she wishes to use, and to use them with appropriate patient consent in compliance with applicable law.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

IMPLEMENTATION TOOLS

Personal Digital Assistant (PDA) Downloads
Quick Reference Guides/Physician Guides

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Living with Illness

IOM DOMAIN

Effectiveness

IDENTIFYING INFORMATION AND AVAILABILITY

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ADAPTATION

Not applicable: The guideline was not adapted from another source.

DATE RELEASED

1998 Sep (revised 2008 Sep)

GUIDELINE DEVELOPER(S)

American Academy of Ophthalmology - Medical Specialty Society

SOURCE(S) OF FUNDING

American Academy of Ophthalmology without commercial support

GUIDELINE COMMITTEE

Cornea/External Disease Panel; Preferred Practice Patterns Committee

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

These panel and committee members have disclosed the following financial relationships occurring from January 2007 to October 2008:

Robert S. Feder, MD: Alcon Laboratories, Inc. – Lecture fees

Donald S. Fong, MD, MPH: Merck – Consultant/Advisor

Douglas E. Gaasterland, MD: Inspire Pharmaceuticals – Consultant/Advisor; IRIDEX – Consultant/Advisor, Equity owner, Patents/Royalty

Francis S. Mah, MD: Alcon Laboratories, Inc. – Consultant/Advisor, Lecture fees, Grant support; Allergan, Inc. – Consultant/Advisor, Lecture fees, Grant support; BD Medical - Ophthalmic Systems – Lecture fees; InSite Vision, Inc. – Consultant/Advisor, Lecture fees, Grant support; Inspire Pharmaceuticals, Inc. – Consultant/Advisor, Lecture fees, Grant support; Ista Pharmaceuticals – Consultant/Advisor, Lecture fees, Grant support; Mpex, Inc. – Consultant/Advisor, Grant support; Polymedix, Inc. – Consultant/Advisor, Grant support; Xoma, Inc. – Consultant/Advisor, Grant support

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Christopher J. Rapuano, MD: Alcon Laboratories, Inc. – Lecture fees; Allergan, Inc. – Consultant/Advisor, Lecture fees; Inspire Pharmaceuticals – Lecture fees; Ista Pharmaceuticals – Lecture fees; Rapid Pathogen Screening – Equity/owner; Ziemer Ophthalmic Systems AG – Consultant/Advisor

Audrey R. Talley-Rostov, MD: Addition Technology – Consultant/Advisor, Lecture fees; Advanced Medical Optics – Consultant/Advisor, Lecture fees; Allergan, Inc. – Consultant/Advisor, Lecture fees; Visiogen, Inc. – Consultant/Advisor

Jayne S. Weiss, MD: Alcon Laboratories, Inc. – Lecture fees

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GUIDELINE AVAILABILITY

Electronic copies: Available from the American Academy of Ophthalmology (AAO) Web site.

Print copies: Available from American Academy of Ophthalmology, P.O. Box 7424, San Francisco, CA 94120-7424; Phone: (415) 561-8540.

AVAILABILITY OF COMPANION DOCUMENTS

The following is available:

- Summary benchmarks for preferred practice patterns. San Francisco (CA): American Academy of Ophthalmology; 2008 Nov. 22 p.

Electronic copies: Available in Portable Document Format (PDF) or Personal Digital Assistant (PDA) format from the American Academy of Ophthalmology (AAO) Web site.

Print copies: Available from American Academy of Ophthalmology, P.O. Box 7424, San Francisco, CA 94120-7424; Phone: (415) 561-8540.

PATIENT RESOURCES

None available

NGC STATUS

This NGC summary was completed by ECRI on February 20, 1999. The information was verified by the guideline developer on April 23, 1999. This summary was updated by ECRI on April 9, 2004. The information was verified by the guideline developer on May 20, 2004. This NGC summary was updated by ECRI Institute on April 22, 2009. The updated information was verified by the guideline developer on May 15, 2009.

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